AMENDMENTS TO THE CLAIMS

1. (currently amended) A method practiced on a computer for accommodating interaction phenomena in a data-flow-based simulation of a system of elements, the method comprising:

establishing a plurality of meta-modules, each of the plurality of meta-modules simulating an element in the system of elements; ~~and~~

establishing a plurality of world modules associated with respective ones of one or more interaction phenomena such that each of the plurality of world modules is associated with a proxy module from each meta-module of a group of the plurality of meta-modules, the group being associated with one of the one or more interaction phenomena, the proxy module from each meta-module of the group forming a grouping of proxy modules.; and.

providing output of the simulation to one or more users to perform one or more actions selected from, displaying the output, monitoring behavior of one or more elements, controlling one or more elements and, planning a route for one or more elements.

2. (previously presented) The method according to claim 1, wherein the plurality of world modules includes one or more of a communication world, and a sensor world.

3. (previously presented) The method according to claim 1, wherein one or more of the plurality of world modules is associated with another one or more of the plurality of world modules.

4. (previously presented) The method according to claim 1, further comprising the step of simulating one of the one or more interaction phenomena in a corresponding one of the plurality of world modules by accessing one or more member functions in the grouping of proxy modules.

5. (original) The method according to claim 1, further comprising the step of dynamically allocating the proxy module at a desired point in the simulation of the system of elements so as to accommodate the addition of an element in the system of elements being simulated.

6. (previously presented) The method of claim 5, further comprising the step of dynamically generating the proxy module by at least one of the plurality of world modules.

7. (original) The method of claim 5, wherein the step of dynamically allocating is performed during execution without re-compiling.

8. (original) The method according to claim 1, further comprising the step of dynamically de-allocating the proxy module at a desired point in the simulation of the system of elements so as to accommodate the deletion of an element in the system of elements being simulated.

9. (original) The method of claim 8, wherein the step of dynamically de-allocating is performed during execution without re-compiling.

10. (original) The method of claim 1, wherein the system of elements includes one or more of: a system of embodied agents, a system of robots, a system of mobile communication terminals, and a system of vehicles.

11. (previously presented) The method of claim 1, further comprising the step of at least one of the plurality of world modules dynamically allocating one or more ports to the proxy module.

12. (previously presented) The method of claim 1, further comprising the step of updating the proxy module by at least one of the plurality of world modules.

13. (previously presented) A computer-based apparatus for accommodating interaction phenomena in a data-flow-based simulation of a system of elements, the apparatus comprising:

a memory for storing a set of instructions;

a processor coupled to the memory for executing the set of instructions, the set of instructions comprising,

a first group of instructions for causing the processor to establish a plurality of meta-modules, each of the plurality of meta-modules simulating an element in the system of elements and,

a second group of instructions for causing the processor to establish a plurality of world modules associated with respective ones of one or more interaction phenomena such that each of the plurality of world modules is associated with a proxy module from each meta-module of a group of the plurality of meta-modules, the group being associated with one of the one or more interaction phenomena, the proxy module from each meta-module of the group forming a grouping of proxy modules.

14. (previously presented) The apparatus according to claim 13, wherein the plurality of world modules includes one or more of a communication world, and a sensor world.

15. (previously presented) The apparatus according to claim 13, wherein one or more of the plurality of world modules is associated with another one or more of the plurality of world modules.

16. (previously presented)The apparatus according to claim 13, wherein the set of instructions further comprises a third group of instructions, the third group of instructions causing the processor to simulate one of the one or more interaction phenomena in a corresponding one of the plurality of world modules by accessing one or more member functions in the grouping of proxy modules.

17. (previously presented) The apparatus according to claim 13, wherein the set of instructions further comprises a fourth group of instructions, the fourth group of instructions causing the processor to dynamically allocate the proxy module at a desired point in the simulation of the system of elements so as to accommodate the addition of an element in the system of elements being simulated.

18. (previously presented) The apparatus according to claim 17, wherein the fourth group of instructions further cause the processor to perform dynamic generation of the proxy module using at least one of the plurality of world modules.

19. (previously presented)The apparatus according to claim 17, wherein, in dynamically allocating, the fourth group of instructions further cause the processor to perform dynamic allocation during execution without re-compiling.

20. (previously presented) The apparatus according to claim 13, wherein the set of instructions further comprises a fifth group of instructions, the fifth group of instructions causing the processor to dynamically de-allocate the proxy module at a desired point in the simulation of the system of elements so as to accommodate the deletion of an element in the system of elements being simulated.

21. (original) The apparatus according to claim 13, wherein the system of elements includes one or more of: a system of embodied agents, a system of robots, a system of mobile communication terminals, and a system of vehicles.

22. (previously presented) The apparatus according to claim 13, wherein the set of instructions further comprises a sixth group of instructions, the sixth group of instructions causing the processor to dynamically allocate one or more ports to the proxy module from at least one of the plurality of world modules.

23. (previously presented) The apparatus according to claim 13, wherein the set of instructions further comprises a seventh group of instructions, the seventh group of instructions causing the processor to update the proxy module by at least one of the plurality of world modules.

24. (currently amended) A method practiced on a computer for accommodating a plurality of interaction phenomena in a data-flow-based simulation of a system of elements, the data-flow-based simulation involving a plurality of modules, the method comprising:

simulating each element in the system of elements with a meta-module;

establishing a world module for each of the plurality of interaction phenomena;

associating each element in the system of elements with one or more modules in the plurality of modules;

establishing an association between the world module and a proxy module associated with each of one or more elements of the system of elements which have an association with an interaction phenomena corresponding to the world module; ~~and~~

dynamically allocating the proxy module during the simulation so as to accommodate the addition of another element in the system of elements~~.~~; and,

providing output of the simulation to one or more users to perform one or more actions selected from, displaying the output, monitoring behavior of one or more elements, controlling one or more elements and, planning a route for one or more elements.